

Contribution and Survival of Stocked Muskellunge, and Population Dynamics of Adult Muskellunge in Spirit, East Okoboji, West Okoboji, and Clear Lakes

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Recent advances in artificial feeding techniques have increased the numbers and reliability of producing muskellunge *Esox masquinongy* fingerlings in Iowa. Most of the muskellunge fingerlings produced in Iowa since 1984 were raised on dry pelleted-feed. We compared the survival of pellet-reared to traditional minnow-reared muskellunge fingerlings stocked into Spirit and West Okoboji Lakes in Northwest Iowa. Beginning in 1991, all muskellunge fingerlings were marked with freeze brands to differentiate the type and year fingerlings were stocked. Adult muskellunge were caught each spring with 360 ft, 2.5 in bar mesh gillnets. All muskellunge caught were examined for brands, individually marked with Visual Implant Tags, and released into the same lake as captured. Abundance and survival of stocked fingerlings to year-classes were estimated from recaptures of branded and individually marked muskellunge. In most years none of the pellet-reared fingerlings survived. The poor survival of these fish was most likely due to a combination of poor health, poor color (camouflage barring was muted and virtually nonexistent), and small size (6-9 in TL). Minnow-reared muskellunge fingerlings were much larger (10-13 in TL), with strong camouflage barring, no apparent nutritional problems, and survived much better than pellet-reared fish. Minnow-fed fingerlings stocked in the spring survived much better than these same fish stocked in the fall. Such success with stocking muskellunge in the spring could drastically change stocking strategies in Iowa; fewer fish may need to be stocked, and management objectives could be met without annual stockings. Currently, or muskie populations are experiencing the highest level of recruitment ever recorded. These high recruitment levels are the sole result of stocking yearling muskellunge in the spring. The current adult populations in the Iowa Great Lakes are nearing our management objectives.